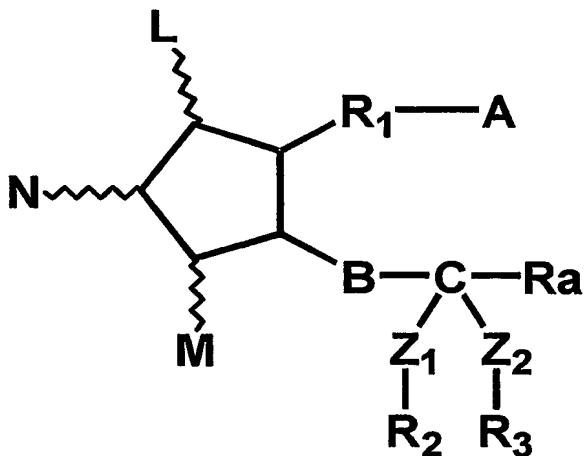


CLAIMS

1. A composition for promoting hair growth in a mammalian subject, comprising a prostaglandin compound having two hetero atoms at the 15 position as an active ingredient thereof.

5

2. The composition as described in claim 1, wherein said prostaglandin compound is the compound as shown by the following formula (I):



wherein L, M and N are hydrogen, hydroxy, halogen, lower alkyl, hydroxy(lower)alkyl, lower alkanoyloxy or oxo, wherein at least one of L and M is a group other than hydrogen, and the five-membered ring may have at least one double bond;

15

A is $-\text{CH}_3$, or $-\text{CH}_2\text{OH}$, $-\text{COCH}_2\text{OH}$, $-\text{COOH}$ or a functional derivative thereof;

B is $-\text{CH}_2-\text{CH}_2-$, $-\text{CH}=\text{CH}-$ or $-\text{C}\equiv\text{C}-$;

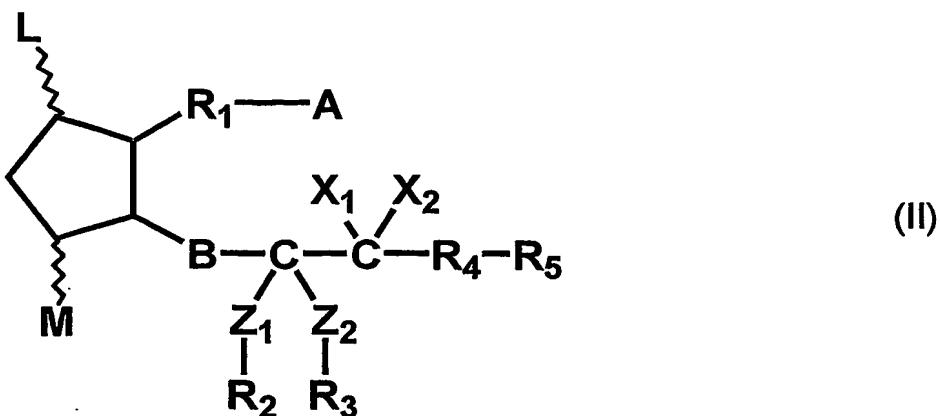
Z_1 and Z_2 are oxygen, nitrogen or sulfur;

R_2 and R_3 are optionally substituted lower alkyl, which is optionally linked together to form lower alkylene;

R_1 is a saturated or unsaturated bivalent lower or 5 medium aliphatic hydrocarbon residue, which is unsubstituted or substituted with halogen, alkyl, hydroxy, oxo, aryl or heterocyclic group, and at least one of carbon atom in the aliphatic hydrocarbon is optionally substituted by oxygen, nitrogen or sulfur; and

10 R_a is a saturated or unsaturated lower or medium aliphatic hydrocarbon residue, which is unsubstituted or substituted with halogen, oxo, hydroxy, lower alkoxy, lower alkanoyloxy, cyclo(lower)alkyl, cyclo(lower)alkyloxy, aryl, aryloxy, heterocyclic group or hetrocyclic-oxy group; lower 15 alkoxy; lower alkanoyloxy; cyclo(lower)alkyl; cyclo(lower)alkyloxy; aryl; aryloxy; heterocyclic group; heterocyclic-oxy group.

3. The composition as described in claim 2, wherein the prostaglandin compound is represented by the formula 20 (II):



wherein L, M, A, B, Z₁, Z₂, R₁, R₂ and R₃ are the same as Claim 2,

X₁ and X₂ are hydrogen, lower alkyl, or halogen;

5 R₄ is a single bond or lower alkylene; and

R₅ is lower alkyl, lower alkoxy, lower alkanoyloxy, cyclo(lower)alkyl, cyclo(lower)alkyloxy, aryl, aryloxy, heterocyclic group or heterocyclic-oxy group.

4. The composition as described in claim 1, wherein
10 said prostaglandin compound is 13,14-dihydro-15,15-ethylenedioxy-20-ethyl-PGF_{2α} isopropyl ester.

5. The composition as described in claim 1, wherein
15 said prostaglandin compound is 13,14-dihydro-15,15-ethylenedioxy-17-phenyl-18,19,20-trinor-PGF_{2α} isopropyl ester.

6. The composition as described in claim 1, wherein
said prostaglandin compound is 13,14-dihydro-15,15-trimethylenedioxy-20-ethyl-PGF_{2α} isopropyl ester.

7. The composition as described in claim 1, wherein

said prostaglandin compound is 13,14-dihydro-15,15-dimethoxy-20-ethyl-PGF_{2α} isopropyl ester.

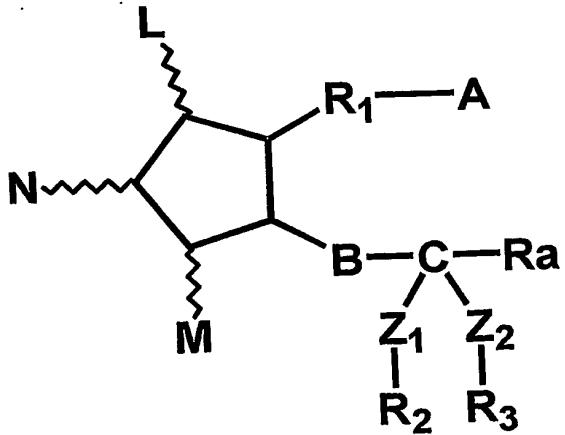
8. The composition as described in claim 1, wherein
said prostaglandin compound is 13,14-dihydro-15,15-
ethylenedioxy-20-ethyl-PGF_{2α} ethyl ester.

5 9. A method for promoting hair growth in a mammalian
subject, comprising administering an effective amount of a
prostaglandin compound having two hetero atoms at the 15
position to the subject in need thereof.

10 10. Use of a prostaglandin compound having two hetero
atoms at the 15 position for manufacturing a composition
for promoting hair growth in a mammalian subject.

11. A compound represented by the following formula

(I):



15

wherein L, M and N are hydrogen, hydroxy, halogen,
lower alkyl, hydroxy(lower)alkyl, lower alkanoyloxy or oxo,
wherein at least one of L and M is a group other than

hydrogen, and the five-membered ring may have at least one double bond;

A is $-\text{CH}_3$, or $-\text{CH}_2\text{OH}$, $-\text{COCH}_2\text{OH}$, $-\text{COOH}$ or a functional derivative thereof;

5 B is $-\text{CH}_2-\text{CH}_2-$, $-\text{CH}=\text{CH}-$ or $-\text{C}\equiv\text{C}-$;

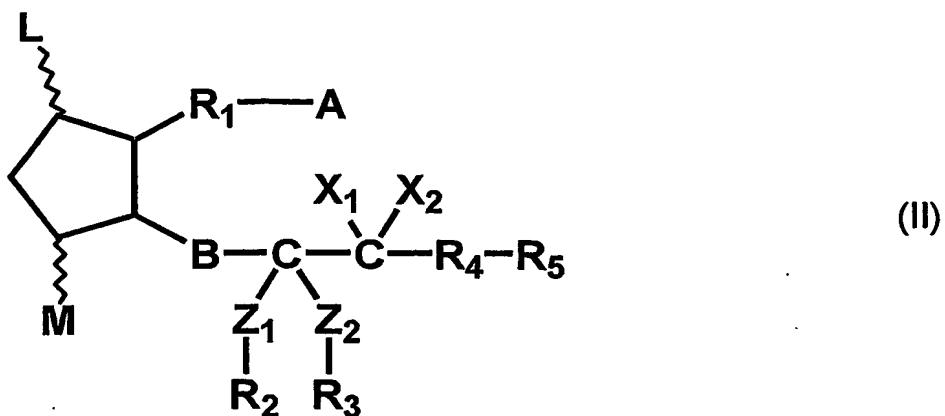
Z_1 and Z_2 are oxygen, nitrogen or sulfur;

R_2 and R_3 are optionally substituted lower alkyl, which is optionally linked together to form lower alkylene;

10 R_1 is a saturated or unsaturated bivalent lower or medium aliphatic hydrocarbon residue, which is unsubstituted or substituted with halogen, alkyl, hydroxy, oxo, aryl or heterocyclic group, and at least one of carbon atom in the aliphatic hydrocarbon is optionally substituted by oxygen, nitrogen or sulfur; and

15 R_4 is a saturated or unsaturated lower or medium aliphatic hydrocarbon residue, which is unsubstituted or substituted with halogen, oxo, hydroxy, lower alkoxy, lower alkanoyloxy, cyclo(lower)alkyl, cyclo(lower)alkyloxy, aryl, aryloxy, heterocyclic group or heterocyclic-oxy group; lower 20 alkoxy; lower alkanoyloxy; cyclo(lower)alkyl; cyclo(lower)alkyloxy; aryl; aryloxy; heterocyclic group; heterocyclic-oxy group.

12. The compound as described in claim 11, wherein said compound is represented by the formula (II):



wherein L, M, A, B, Z₁, Z₂, R₁, R₂ and R₃ are the same as Claim 11;

X₁ and X₂ are hydrogen, lower alkyl, or halogen;

5 R₄ is a single bond or lower alkylene; and

R₅ is lower alkyl, lower alkoxy, lower alkanoyloxy, cyclo(lower)alkyl, cyclo(lower)alkyloxy, aryl, aryloxy, heterocyclic group or heterocyclic-oxy group.

13. The compound as described in claim 12, wherein R₂ and R₃ are linked together to form C3 alkylene.